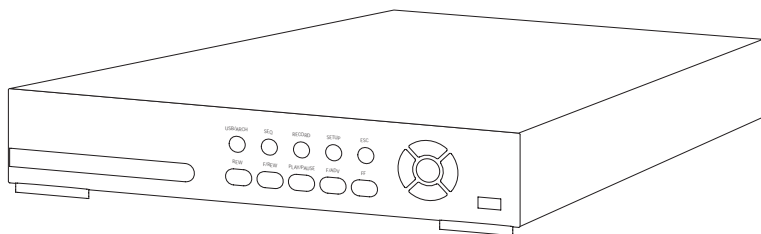


Digia Installation Manual



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Regulatory



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Preface

This is the GE *Digia Installation Manual* for model DIGI-4. This document includes an overview of the product and detailed instructions explaining:

- how to make connections; and
- how to operate functions.

There is also information describing how to contact technical support if you have questions or concerns.

To use this document effectively, you should have the following minimum qualifications:

- a basic knowledge of CCTV systems and components; and
- a basic knowledge of electrical wiring and low-voltage electrical connections.

Read these instructions and all ancillary documentation entirely before installing or operating this product. The most current versions of this and related documentation may be found on our website. Refer to *Online publication library* on page 8 for instructions on accessing our online publication library.

Note: A qualified service person, complying with all applicable codes, should perform all required hardware installation.

Conventions used in this manual

The following conventions are used in this document:

Bold	Menu items and buttons.
<i>Italic</i>	Emphasis of an instruction or point; special terms.
	File names, path names, windows, panes, tabs, fields, variables, and other GUI elements.
	Titles of books and various documents.
<i>Blue italic</i>	(Electronic version.) Hyperlinks to cross-references, related topics, and URL addresses.
Monospace	Text that displays on the computer screen.
	Programming or coding sequences.

Safety terms and symbols

These terms may appear in this manual:



CAUTION: *Cautions* identify conditions or practices that may result in damage to the equipment or other property.



WARNING: *Warnings* identify conditions or practices that could result in equipment damage or serious personal injury.

Overview

The Digia is an MPEG-4-based, 4-channel triplex DVR with audio. It can simultaneously record and play video, and it allows you to monitor the system over a network. There are four user-programmable motion regions for each channel for detection and alarm. It also has a powerful PC program used for live monitoring and recording over the network.

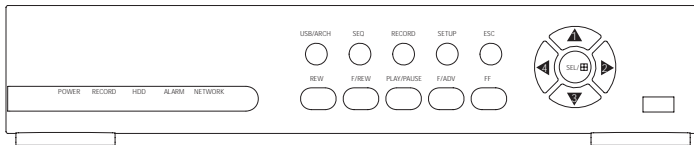


WARNING: Digia uses a lithium battery. If this battery is replaced with the wrong type, there is a risk of explosion. Dispose of or recycle used lithium batteries according to your local governmental standards.

Operation panel

The following information will help you operate the front panel controls.

Figure 1. Front panel



The indicator lights are described in *Table 1*.

Table 1. Indication lamps

Name	Description
Power	Lights up when the power is on.
Record	Lights up when the system is recording.
HDD	Lights up when the system is accessing the HDD.
Alarm	Lights up when the system detects an alarm caused by a sensor or motion.
Network	Lights up when a user has connected to the system through the network.

The front panel buttons are described in

Table 2. Front panel buttons

Button	Description
USB/ARCH	Press to enter capture menu.
SEQ	Press to start sequencing cameras automatically in full-screen mode.
RECORD	Press to start and stop manual recording.
SETUP	Press to start the setup menu.
ESC	Press to go to the previous menu screen or to exit the menu.
REW	Press to rewind the footage at 1x, 2x, and 4x speeds. In Live mode, press to view the log data.
F/REW	Press to back up video footage in 60-second increments.
PLAY/PAUSE	Press to play or pause recorded video, or to launch the search menu.

Table 2. Front panel buttons (continued)

Button	Description
F/ADV	Press to advance the video footage in 60-second increments.
FF	Press to fast forward the footage at 1x, 2x, and 4x speeds. In Live mode, press to view the archive list.
UP	Press to move up in a menu. Also used to select channel 1 or input the number 1.
RIGHT	Press to move right in a menu, or increase a value in a menu item. Also used to select channel 2 or input the number 2.
DOWN	Press to move down in a menu. Also used to select channel 3 or input the number 3.
LEFT	Press to move left in a menu, or decrease a value in a menu item. Also used to select channel 4 or input the number 4.
SEL	Switch between full-screen and quad-view. Also used to select values in menus.

There is also a USB port on the front panel. This USB port is used to archive footage onto a USB storage device. For more information on how to archive to a USB device, see [Archiving to USB storage](#) on page 30.

Rear panel

Refer to *Figure 2* and *Table 3* to connect the appropriate devices.

Figure 2. Rear panel

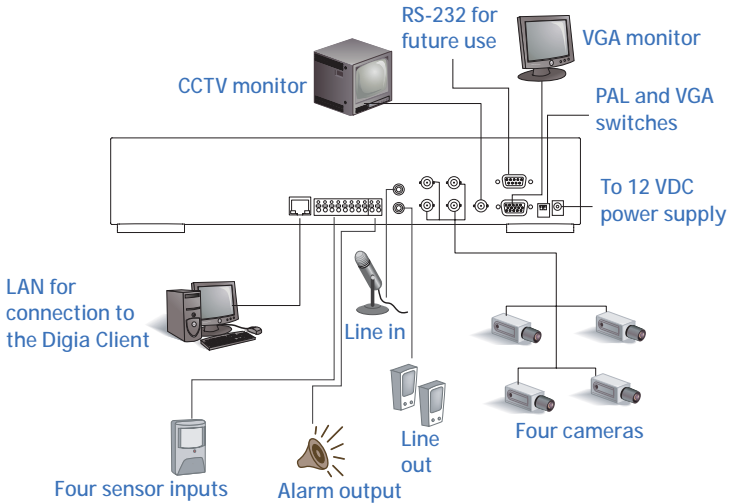


Table 3. Rear panel connections

Connection	Purpose
Video in	Four BNC connectors for video input.
Line in	One connection for audio input.
Line out	One connection for audio output.
Video out	One connection for video output.
VGA	One connection to use a VGA monitor.
RS-232C	For future use.

Table 3. Rear panel connections (continued)

Connection	Purpose
Sensor in	Four connections for sensor input. Normally open or normally closed can be selected as the sensor.
Alarm out	One connection for alarm output. Provides simple on/off switching with a relay (0.5 A, 125V)
LAN	One RJ45 connection for LAN connectivity.
DC 12V	One connection for 12 VDC power input cable, provided.
Switches	
PAL	Set to ON when video is PAL.
VGA	Set to ON when using a VGA monitor.



CAUTION:

Before disconnecting power from the Digia, make sure to stop any operations that access the hard drive, such as recording or playing back video.

Setting up the DVR

The following sections detail the initial setup of the DVR.

Setup menu

When you press the **Setup** button, the DVR will ask you for a password before taking you to the **Setup** menu (*Figure 3*). The default password is *1111*, which can be entered by pressing the **Up** button four times. We recommend you protect the system by assigning a new password. For more information on how to set a new password refer to *System menu* on page 15.

Figure 3. Setup menu



Live menu

The first submenu is the **Live** menu (*Figure 4*). Navigate through the menu items by pressing the **Up** and **Down** buttons. You can change the value of a menu item by pressing the **Left** and **Right** buttons.

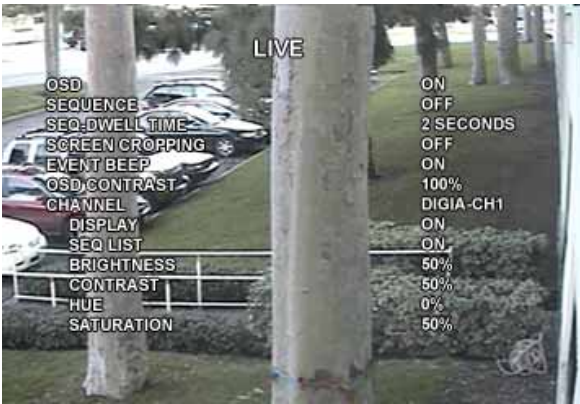
Table 4. Live menu options

Item	Description
OSD	Enable or disable the onscreen display.
Sequence	Enable or disable the sequential display of video channels in full screen mode.
Seq-dwell time	Dwell time for each channel displayed in sequence.
Screen cropping	Enable or disable cropping to make the display fit into the screen.
Event beep	Enable or disable a beep when an event occurs.
OSD contrast	Set the visibility of the onscreen display.
Channel	Select the channel to apply the following settings to. Can display a name of up to 12 characters.
Display	Enable or disable display of the video channel in live display mode.
Seq list	Enable or disable the specified channel to be included in sequence mode.
Brightness	Change the brightness value for the specified channel.
Contrast	Change the contrast value for the specified channel.
Hue	Change the hue value for the specified channel.

Table 4. Live menu options (continued)

Item	Description
Saturation	Change the saturation value for the specified channel.

Figure 4. Live menu



Record menu

The second submenu is the **Record** menu (*Figure 5* on page 12). Navigate through the menu items by pressing the **Up** and **Down** buttons. You can change the value of a menu item by pressing the **Left** and **Right** buttons.

Table 5. Record menu options

Item	Description
Resolution	Set resolution to either full or quad.
Channel	Select the channel to apply the following settings to.
Frame rate	Set the frame rate for the specified channel. The sum of the frame rates from each channel cannot exceed maximum frame rates for quad (120 fps for NTSC, 100 fps for PAL) or full (30 fps for NTSC, 25 fps for PAL).
Quality	Select the recording quality for the channel from normal, high, or super.
Recording	Assign the method of recording for each channel. Choose from disable, continuous, by motion, by sensor, or by schedule.
Motion zone	Select full zone or partial zone.
Motion sensitivity	Set the motion sensitivity for the specified channel.
Sensor type	Set the type of sensor for the specified channel from none, N/O (normally open), and N/C (normally closed).
Pre record	Enable or disable preevent recording. The default time is 5 seconds.

Table 5. Record menu options (continued)

Item	Description
Post event record	Set the amount of time to record after an event has occurred.
Alarm	Enable or disable alarm generation for the specified channel. When an alarm is generated, it activates an alarm device connected to the output.
Alarm duration	Set alarm duration for the specified channel.
Audio	Enable or disable audio for channel 1.
Schedule	Set a recording schedule.

Figure 5. Record menu



Motion zones

By selecting **Partial Zone** in the **Motion** menu, you can set motion zones (Figure 6). Move around each rectangular zone using the four direction buttons and press the **SEL** button to

include the region as part of the motion sensing zone. The blocks will change color to indicate that they are part of the motion sensing zone.

Figure 6. Motion zone screen



Recording schedule

If you select **Schedule** from the **Record** menu, you will be able to set up a recording schedule (Figure 7). Use the buttons in Table 6 to navigate and set the appropriate type of recording.

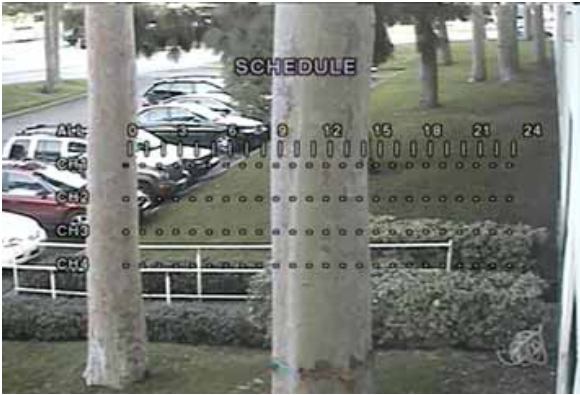
When the cursor has selected **All** and a type of recording is selected, it will apply that type of recording to all channels at all times. You can apply a type of recording to all channels at a specific time by selecting the slot in the row next to **All**, corresponding to the time of day, where each slot represents one hour on a 24-hour clock. You can also apply a type of recording to a specific channel for a specific time or range of time by

selecting a point in the row next to the channel, under the time of day you wish to apply it to.

Table 6. Schedule recording buttons

Button	Function
REW	Set continuous recording mode (indicated by a "C" onscreen).
F/REW	Clear any existing recording more.
PLAY/PAUSE	Enable motion detection triggered recording (indicated by an "M" onscreen).
FF	Enable sensor triggered recording (indicated by an "S" onscreen).
Up	Move up in menu item.
Right	Move right in menu item.
Down	Move down in menu item.
Left	Move left in menu item.
ESC	Exit from scheduling mode.

Figure 7. Recording schedule



System menu

The third submenu is the **System** menu (Figure 8). Navigate through the menu items by pressing the **Up** and **Down** buttons. You can change the value of a menu item by pressing the **Left** and **Right** buttons.

Table 7. System menu options

Item	Description
DVR ID	The name of the system. Press the SEL button and move through the position for each character by pressing the Left and Right buttons. The Up and Down buttons are used to change the character for each location. Press the ESC button to exit.
Description	Press SEL to see system information.
Load default	Choose Off or On . If selecting On , press the SEL button to load defaults.

Table 7. System menu options (continued)

Item	Description
Admin password	Set the password for the administrator. Once this menu is selected, the DVR will ask you for the current password, and then a new password. Use the Up key for 1, Right for 2, Down for 3, and Left for 4.
Network password	Set the password for the network client. Once this menu is selected, the DVR will ask you for the current password and then a new password. Use the Up key for 1, Right for 2, Down for 3, and Left for 4.
Date format	Select how to display the time and date.
Set date & time	Set the present date and time.

Figure 8. System menu



Network menu

The fourth submenu is the **Network** menu (*Figure 9*). You can input network parameters on this screen. These parameters are used for remote clients who are connected to the DVR over the network.

Table 8. Network menu options

Item	Description
Port	RTSP (Real Time Streaming Protocol) port number
Client access	Enable or disable network client access.
Bandwidth saving	Enable or disable only keyframe transmission. This feature is useful when network bandwidth is not enough for live video streaming.
Network type	Type of network connection (LAN, DHCP, or ADSL).

Figure 9. Network menu



Port

When one or more Digias, are connected through an IP sharing device to a larger network, and you want to access each unit from outside the local area network, each device needs to have a unique RTSP (Real Time Streaming Protocol) port number. You must also configure your IP sharing device for port forwarding, so that each port, when accessed on the IP sharing device, will forward to the appropriate Digia. This port number is listed next to the **Port** menu option in the **Network** menu. If you only plan to access the units from within the same local area network, the RTSP port does not have to be changed.

To access the Digia unit, you must know the following information:

When accessing from inside the same local area network	When accessing from outside the local area network
IP address of the Digia	IP address of the IP sharing device
RTSP port	RTSP port ¹
Username	Username
Password	Password

1. Make sure that port forwarding has been enabled on the IP sharing device and that the port number is set to be forwarded by the IP sharing device to the Digia unit. See your IP sharing device documentation or your system administrator for more information.

In either case, put the information in the appropriate fields in the Digia client camera assignment window. For more information on the Digia client, see the *Digia Client User Manual*.

Network types

There are three network types, LAN, DHCP, and ADSL. Each type requires different settings.

LAN

To use the LAN option when connecting your Digia to a network, the following information is required. If you do not have this information, see your network administrator.

Table 9. LAN

Item	Description
IP	The fixed IP address of the Digia.
Gateway	The IP address of the gateway.
Subnet mask	The subnet mask for the LAN.

DHCP

To use the DHCP option when connecting your Digia to a network, select this option. An IP address is automatically assigned by the DHCP server, which assigns IP addresses and other parameters to new devices automatically. To see what your IP address is, you can find it by selecting **Description** from the **System** menu.

If your network connection doesn't allow additional IP addresses, you will need to use an IP sharing device. In this case, select **LAN** as the **Network Type**. You will also need to configure your IP sharing device for port forwarding to allow for a network connection. For more information on port forwarding, see the documentation for your IP sharing device, or your network administrator.

ADSL

To use the ADSL option when connecting your Digia to a network, the following information is required. If you do not have this information, see your network administrator.

Table 10.

Item	Description
ID	The user ID for your ADSL connection.
Password	The password for your ADSL connection.

Your ADSL connection must have an RJ45 connector output to connect to the Digia.

If you want to share your connection with other devices, you will need to use an IP sharing device. In this case, select **LAN** as the **Network Type**. You will also need to configure your IP sharing device for port forwarding to allow for a network connection. For more information on port forwarding, see the documentation for your IP sharing device, or your network administrator.

Storage menu

The fifth submenu is the **Storage** menu (*Figure 10*). You can choose storage settings in this menu.

Table 11. Storage menu

Item	Description
Overwrite	Overwrites existing material when hard drive is full.
Format	Formats hard drive.

Figure 10. Storage menu



Save setup menu

The sixth submenu is the **Save Setup** menu (*Figure 11*). Not all settings are automatically saved. Select the **Save Setup** menu and choose **Yes** to preserve the values you selected.

Figure 11. Save setup menu



Local mode applications

Live mode features the following windows:

- Live
- Search
- Play
- Setup
- Record

Live window

In live video mode, the cameras are displayed. *Figure 12* indicates the layout of the live screen.

Figure 12. Live window



Various indicators showing the status of the DVR are shown as OSD symbols. Refer to *Table 12* for the meanings of the indicators.

Table 12. OSD symbols









Symbol	Meaning
	Continuous recording in progress.
	Manual recording in progress.
	Sensor alarm recording in progress.
	Motion alarm recording in progress.
	Alarm indicator. When there is an alarm in the video channel, this icon is bright red.
	Indicates that an alarm output is activated.
	Indicates that a network client is connected to the DVR.
	Indicates that the sequencing mode has been enabled.

Table 13. Buttons in live video mode

Button	Description
SETUP	Launch the setup menu.

Table 13. Buttons in live video mode (continued)

Button	Description
SEQ	Enable or disable the automatic sequential display of channels in full screen or automatic sequencing of highlighted channels in quad display mode. Audio is heard from the highlighted channel in quad mode when audio is enabled.
PLAY/PAUSE	Launch the search window.
Direction arrows	Select a channel to be displayed in full screen mode.
SEL	Switch between full screen and quad display mode.
ESC	No action.
RECORD	Perform continuous recording for all channels. A password is needed to start recording.

Search window

Press **Play/Pause** while in live video mode to enter the search window. You will need to enter a password to proceed. The **ESC** button will return you to the live screen.

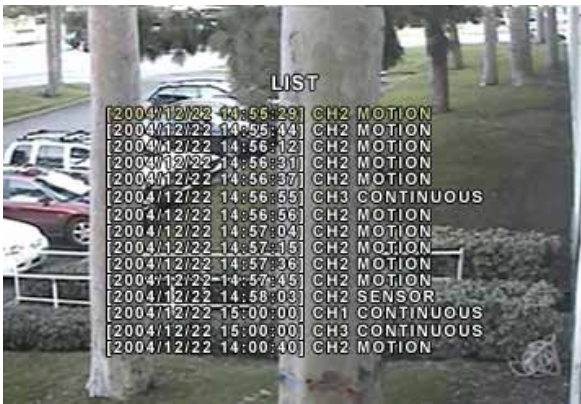
To search for an event, do the following:

1. Select the date of the video you wish to begin searching. Use the **Left** and **Right** buttons to navigate through the year, month, day, and hour. Use the **Up** and **Down** buttons to change the values.
2. Once you have selected the date, press the **SEL** button to move to the channel selector.
3. Use the **Left** and **Right** buttons to change the channel selection from **All** to any of the four available channels.

4. Once you have selected the channel, press the **SEL** button to move to the **Type** selector.
5. Use the **Left** and **Right** buttons to change the type of recording to **All**, **Motion**, **Sensor**, **Manual**, or **Continuous**.
6. Once you have selected the type of recording to search for, press the **SEL** button to produce a list of instances that fit your search criteria (*Figure 13* on page 26).

Note: At any point in this process, you can press the **ESC** button to exit the screen.

Figure 13. Search list



7. Use the **Up** and **Down** buttons to scroll through the onscreen listings.
8. Use the **Left** and **Right** buttons to display events that happened previous to or after your current selection.

9. Once you have selected the event you wish to view, press the **Play/Pause** button to play the selected video.

Note: While you are replaying a recorded event, you are considered to be in play mode. For more information, see [Play mode](#) on page 27.

Play mode

During playback of a recorded event, the mode changes from search to play. While in play mode, you can return to your search list by pressing the **ESC** button. Playback starts in quad mode with channel 1 highlighted. If you have audio enabled, you will hear audio from the highlighted channel only.

Table 14. Play mode buttons

Button	Description
ESC	Return to the previous menu screen, search list, or exit menu.
REW	Press to rewind the footage at 1x, 2x, and 4x speeds.
F/REW	Press to back up video footage in 60-second increments.
PLAY/PAUSE	Press to play or pause recorded video, or to launch the search menu.
F/ADV	Press to advance the video footage in 60-second increments.
FF	Press to fast forward the footage at 1x, 2x, and 4x speeds.
Up	Highlight channel 1.
Right	Highlight channel 2.

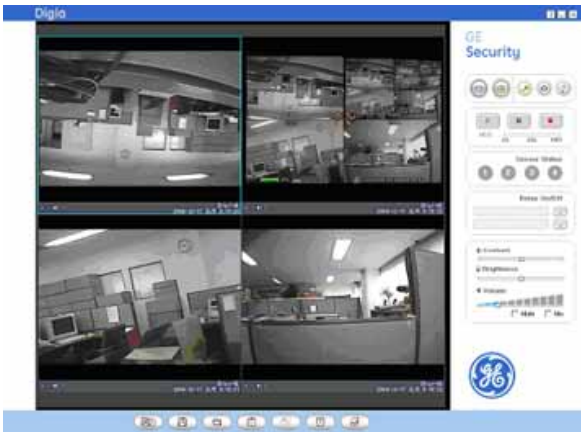
Table 14. Play mode buttons (continued)

Button	Description
Down	Highlight channel 3.
Left	Highlight channel 4.
SEL	Switch view between quad mode and full screen mode displaying highlighted channel.
USB/ARCH	Press to launch archiving function.

Network client

Digia provides a live remote monitoring feature. For remote monitoring, users of Digia are required to install and run a Digia client program on a PC (*Figure 14*). A LAN connection using the RJ45 connection on the back is required for a remote connection.

Figure 14. Digia client



When the Digia is not recording, the Digia client monitors video at 1 frame per second. When the Digia is recording, the Digia client monitors video at the established recording rate.

Bi directional audio

The Digia client allows for bi directional audio between the client and the Digia unit. On the PC, to use bi directional audio, you will need a sound card capable of handling a microphone and speakers. On the Digia side, you will need to connect a microphone to the audio in connection, and a pair of amplified speakers to the audio out connection.

Archiving to USB storage

To archive a still image or video to a USB storage device, you must first capture a still image or video to the hard drive.

Capturing images or video

Still images can be captured and stored into the hard drive in live mode or while playing back recorded video. In live mode, press the **USB/ARCH** button to capture and store the still image. When you press the **USB/ARCH** button, you must use the **Left** and **Right** buttons to highlight **Yes** and press the **SEL** button (*Figure 15*).

Figure 15. Archive



The still image will be stored on the hard drive and can be transferred to USB storage later.

In playback mode, press the **USB/ARCH** button to display the Archive menu. Choose between storing a still image or video. If you select still image, the image will be stored on the hard drive.

If you select video, set the amount of time in seconds you want to store (*Figure 16* on page 31) and the video will be stored temporarily for transfer to a USB storage device.

Figure 16. Video duration



CAUTION: It is important that you transfer the video soon after capturing it before the video content is wiped out.

Transferring images or video to USB

To transfer your stored images or video to a USB storage device do the following:



CAUTION: If the Digia is connected to a network, you need to disable network client access by setting the Client Access parameter to Off in the Network menu. Once you are finished archiving, you can set the Client Access parameter to On again.

Connect a USB storage device. Then, in live mode, press the **FF** button. This will bring up the archive screen (*Figure 17* on page 32) that will allow you to specify a date and time to search for stored images or video.

Figure 17. Archive menu



After you set the time and date to search, press the **SEL** button to retrieve a list of archived images or video (*Figure 18* on page 33).

Figure 18. List



Select one of the files in the list using the **Up** and **Down** buttons, and then press the **SEL** button to display the image or first frame of the video. Press the **USB/ARCH** button to start the transfer process. Select **Yes** to start the transfer. The Digia will check for a USB device. If one is not present, the Digia will display **Check fail** and quit the transfer. If one is present, the transfer will start. Depending on the file size, the process may take a few minutes.

If there is not enough space on the USB device, the Digia will display an error message and quit the transfer process. Disconnect the USB device from the Digia and either connect a USB device with adequate space, or delete files from the USB storage device to make adequate space and try the transfer again.

In the case of video, the file will be in AVI format, and the DivX codec is required for proper playback in a media player. The DivX codec can be downloaded from:

<http://www.divx.com/divx/download/>

USB tips

Improper handling of the USB storage device can cause problems:

- When connecting the USB device, make sure to plug the device in smoothly.
- Before archiving, make sure there is adequate space on the USB device for the transfer.
- Once the USB device is plugged in, wait at least five seconds before removing the device.



CAUTION: Do not unplug the USB device during a data transfer. This can cause the files being transferred to become corrupted, and may result in data loss.

Upgrading firmware

Digia is designed to be upgradable through firmware updates. To upgrade the firmware, the Digia must be in engineering mode.



CAUTION: Upgrade procedures may change between releases of firmware updates. Refer to the release notes included with each firmware update before proceeding with the upgrade process.

To start engineering mode, do the following:

1. Press the **Setup** button and enter the admin password (default is *1111*).
2. Go to the **System** menu and select the **Admin password** menu item.
3. Enter the password as *12341234*, and press the **SEL** button.

Note: To exit engineering mode, regardless if you've upgraded or not, select **Boot Application**.

When in engineering mode (*Figure 19* on page 36), you can select the method to use when upgrading. The two methods available are a **USB Upgrade** and **Network Upgrade**.

Note: There are menu items described as test modes. These tests are used for manufacturing purposes only.

Figure 19. Engineering mode



Upgrading through USB

To upgrade the firmware through a USB connection, do the following:



CAUTION: Upgrade procedures may change between releases of firmware updates. Refer to the release notes included with each firmware update before proceeding with the upgrade process.

1. Create a directory under the root directory of the USB device called *upgrade*.
2. Copy the updated firmware (*.bin) to the directory you just created and rename the file *app.bin*. To obtain the updated firmware, contact technical support.
3. Connect the USB device to the USB port on the front of the Digia.

4. Select USB upgrade in engineering mode.
5. Press the **SEL** button to start the upgrade.
6. Once finished, the system will restart. Choose **Boot Application** from the engineering menu to restart the Digia with the new firmware (*Figure 20*) in normal mode.

Figure 20. USB upgrading



Upgrading through LAN

To upgrade the firmware through the LAN connection, do the following:



CAUTION: Refer to the upgrade package release notes for any updates or changes to this upgrade procedure.

1. Download the upgrade package onto your PC. To obtain the upgraded firmware, contact Technical Support.
2. Unzip the upgrade package to a directory.
3. Make sure that your PC and the Digia are both connected to the same LAN.
4. Select **Network Upgrade** in engineering mode.
5. On your PC, open the command console by selecting **Start | Run**, and typing *CMD*. Then click **OK**.
6. In the command console, go to the directory where you unzipped the upgrade package by typing *CD\temp*, where *temp* is the directory the files are located.
7. At the command line, type the following:

```
ntmon <IP_address>
```

...where *<IP address>* is the IP address of the Digia set in the **Network** menu. Once you enter this command, the system will respond with:

```
Connecting [<IP Address>]  
Connected to [<IP Address>]]  
Welcome to TM Monitor Program
```

8. At the command line, type the following:

```
up <app.bin>
```

...to upgrade the firmware, where `<app.bin>` is the name of the upgrade file. Refer to the release notes with each upgrade for the name of the firmware file. The PC will show the bytes sent to the Digia. When the upgrade is finished, the Digia will display a message.

9. Once the upgrade is finished, choose **Boot Application** from the engineering mode menu to restart the Digia with the new firmware.

Note: More detailed procedures or changes to the procedure will be detailed in the release notes for each upgrade package. Refer to the release notes before starting the upgrade.

Contacting technical support

For assistance installing, operating, maintaining, and troubleshooting this product, refer to this document and any other documentation provided. If you still have questions, you may contact technical support during normal business hours (Monday through Friday, excluding holidays, between 6 a.m. and 5 p.m. Pacific Time).

Table 15. Sales and support contact information

	Sales	Technical support
Phone:	Toll-free: 888.GESECURity (888.437.3287 in the US, including Alaska and Hawaii; Puerto Rico; Canada). Outside the toll-free area: 503.885.5700.	
E-mail	info@gesecurity.com	generaltech@ge.com
Fax	800.483.2495	541.752.9096 (24 hours/day)

Note: Be ready at the equipment before calling for technical support.

Online publication library

Another great resource for assistance with your GE product is our online publication library, available to all of our customers. To access the library, go to our website at the following location:

<http://www.gesecurity.com>

In the **Tools** area at the top, click the *Publication Library* link. After you register and log on, you may search through our online library for the documentation you need.¹

1. Many GE documents are provided as PDFs. To read these documents, you will need Adobe Acrobat Reader, which can be downloaded free from Adobe's website at www.adobe.com.